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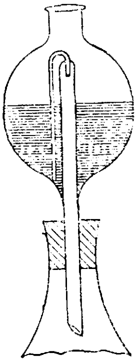
APPARATUS.

Water-seal for Use when Boiling Liquids in a Reducing Atmosphere.

H. Göckel. (*Zeits. angew. Chem.*, 1899, 620.)—This device is intended to be employed with flasks in which (for example) ferric iron solutions are being reduced by hydrogen. It preserves the liquid from contact with air; and, unlike the ordinary slit rubber valve, does not leave a high and dangerous vacuum within the vessel after its contents have been boiled and cooled. When inserted in the flask, the bulb is charged to just above the opening of the syphon tube with water or a solution of sodium bicarbonate; the main liquid can then be boiled briskly without driving the water out of the seal. When the flame is removed the bulb is filled up to the position shown in the diagram with a cold-saturated solution of sodium bicarbonate. As the pressure in the flask falls, liquid is sucked back through the syphon, which, on coming in contact with the acid, immediately liberates carbon dioxide, and soon restores and maintains the internal pressure equal with that of the atmosphere. In this manner, titration, etc., of the reduced solution can be safely postponed to a convenient opportunity.



F. H. L.

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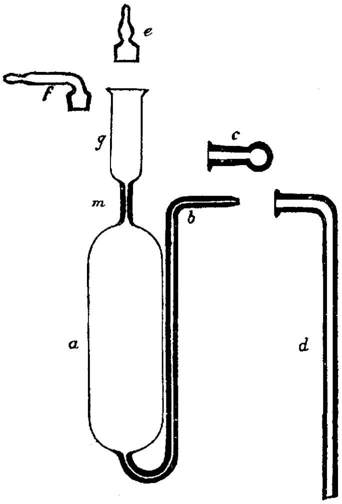
A Modification of the Sprengel Tube. A Minozzi. (*Gazzetta Chim. Ital.*, 1899, xxix., 406, 407.)—The tube shown in the accompanying figure was devised by the author as a convenient apparatus for determining the specific gravity of acids, while obviating all chance of losing any of the liquid by expansion on exposure to a higher temperature.



It holds about 50 c.c. from the mark on the capillary tube, *m*, to the extremity of the arm, *b*. In filling it the tubes *f* and *d* are fitted to *g* and *b* respectively, a mercury-pump being connected with *f*, while *d* is inserted through a cork pierced with two holes closing the bottle containing the acid.

The tube and the bottle of acid are both immersed in water at the required temperature, and when the liquid has been brought to the definite volume, the tube is closed by the stopper, *e*, and the cap, *c*.

C. A. M.

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